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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,075	05/12/2005	Jean-Christopher Duclos	072691-015	7598

  

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EXAMINER	
PLUMMER, ELIZABETH A	

  

ART UNIT	PAPER NUMBER
3635	

  

NOTIFICATION DATE	DELIVERY MODE
03/01/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto33401@mwe.com

### Office Action Summary

**Application No.**

10/522,075

**Applicant(s)**

DUCLOS ET AL.

**Examiner**

ELIZABETH A. PLUMMER

**Art Unit**

3635

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,5-7,9,10 and 13-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5-7,9,10 and 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/2009 has been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 7, 9, 10, 13, 15 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Ladika et al. (US Patent 5,663,520).

a. Regarding claim 1, Ladika et al. disclose a sandwich structure (Fig. 8) for protecting a fixed or mobile installation or equipment, said sandwich structure comprising: an outer plate (114) made of a first ductile material (sheet metal), the outer plate capable of resisting the first impact of projectiles, and an inner layer made from a second hard material (60) (steel armor plate) capable of stopping projectiles that passed through the outer plate, the second hard material being harder and less ductile than said first ductile material, spacers (246) for

disposing the outer plate at a distance from the inner layer (Fig. 8) so that no part of the outer plate has any contact with the inner layer, and fixing means (248,254) for detachably fixing the outer plate to the inner layer at the location of the spacers.

- b. Regarding claim 7, each spacer is provided with a threaded bore having a first end and a second end, said threaded bore being designed to hold, at said first end, an attachment screw fixing the spacer onto the inner layer and, at said second end, an attachment screw fixing the outer plate onto the spacer (Fig. 8).
- c. Regarding claim 9, the outer plate has holes for the passage of the fixing means therethrough (Fig. 8), and at least some of the holes loosely receive said fixing means which allows differential expansion of the outer plate and inner layer when the temperature changes.
- d. Regarding claim 10, the spacers have bores which are threaded and fixing means include screws (Fig. 8).
- e. Regarding claim 13, the outer plate has an entirely flat shape (Fig. 8).
- f. Regarding 15, Ladika et al. disclose a sandwich structure (Fig. 8) for protecting a fixed or mobile installation or equipment, said sandwich structure comprising: an outer plate (114) made of a first ductile material (sheet metal), the outer plate capable of resisting the first impact of projectiles and being free of ribs, and an inner layer made from a second hard material (60) (steel armor plate) capable of stopping projectiles that passed through the outer plate, the second hard material being harder and less ductile than said first ductile material,

spacers (246) for disposing the outer plate at a distance from the inner layer (Fig. 8) so that no part of the outer plate has any contact with the inner layer, said spacers having bores, and fixing means (248,254) for detachably fixing the outer plate to the inner layer at the location of the spacers, said fixing means extending through said bores (Fig. 8) and through holes of the outer plate and at least some of said bores and holes loosely receive said fixing means which allows differential expansion of the outer plate and inner layer when the temperature changes.

g. Regarding claim 16, said outer plate has a peripheral edge, and at least one of said spacers is interposed between the outer plate and the inner layer, at a distance from said peripheral edge (Fig. 8) and said spacers create voids between the outer plate and the inner layer, the voids are free from any filler, so that said voids are empty.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 5 and 13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin (US Patent 5,471,905) in view of Ladika et al. (US Patent 5,663,520).

a. Regarding claim 1, Martin discloses a sandwich structure for protecting a fixed or mobile installation or equipment, said sandwich structure comprising an

outer plate (110), the outer plate made of a first ductile material (abstract; column 3, lines 45-48) and designed to resist first impacts of projectiles, the outer plate having a full surface (Fig. 1) and a constant thickness over all of said full surface (Fig. 1), an inner layer (120) made from a second hard material (column 2, lines 38-44) to stop projectiles that passed through the outer plate (column 2, lines 56-60), spacers (130) for disposing the outer plates at a distance from the inner layer (Fig. 1), so that no part of the outer plate has any contact with the inner layer (Fig. 1), and fixing means (132,134) for fixing the outer plate to the inner layer at the location of the spacers. Martin does not disclose that the second material is harder and less ductile than the first ductile material and that the fixing means are for detachably fixing the outer plate to the inner layer. However, it is well known in the art that different materials can be used. For example, Ladika et al. teaches two different materials, a sheet metal (114) and steel armor (60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to try the two different materials taught by Ladika et al. in order to save on manufacturing costs. Furthermore, it would have been a matter of obvious design choice to form outer and inner plates out of different materials, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Also, while Martin does not disclose that the fixing means are for detachably fixing the outer plate to the inner layer, Ladika et al. teaches a detachable fixing means (Fig. 8) in order to be able to

replace just the broken plate or layer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Martin to use a detachable fixing means, such as taught by Ladika et al., in order to make repairs easier.

b. Regarding claim 5, Martin in view of Ladika et al. discloses the invention as claimed except to the inner layer comprising steel and the outer plate comprising aluminum. However, it would have been a matter of obvious design choice to form the inner layer out of steel and the outer layer out of aluminum, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

c. Regarding claim 13, the outer plate has an entirely flat shape (Fig. 1).

6. Claims 1, 3, 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lanz (EP 1182420A1).

a. Regarding claim 1, Lanz discloses a sandwich structure (Fig. 1, 2a) for protecting a fixed or mobile installation or equipment, said sandwich structure comprising an outer plate (2) the outer plate made of a first ductile material (paragraphs 21,22,23) and designed to resist first impacts of projectiles, the outer plate having a full surface (Fig. 3a,4) and a constant thickness over all said full surface (Fig. 3), an inner layer (1) made from a second hard material to stop projectiles that passed through the outer plate (paragraphs 1,2,3), spacers (9,6) for disposing the outer plates at a distance from the inner layer (Fig. 3a,4), so

that no part of the outer plate has any contact with the inner layer (Fig. 3a,4), and fixing means (8, 10, 12) for detachably fixing the outer plate to the inner layer at the location of the spacers. Lanz does not disclose that the second material is harder and less ductile than the first ductile material. However, it is well known in the art that different materials can be used. For example, Ladika et al. teaches two different materials, a sheet metal (114) and steel armor (60). It would have been obvious to one of ordinary skill in the art at the time the invention was made to try the two different materials taught by Ladika et al. in order to save on manufacturing costs. Furthermore, it would have been a matter of obvious design choice to form outer and inner plates out of different materials, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

b. Regarding claim 3, Lanz discloses the structure further comprising conducting elements (13) separate from the outer plate (separate rib), said conducting element being fixed to said outer plate and extending between the outer plate (2) and inner layer (1) to provide electrical continuity between the outer plate and inner layer. Lanz does not disclose that each conducting element has a bore and attachment screws are disposed in said bores at a distance from the inner layer for fixing the conducting elements to said outer plate and the conducting elements are detachably fixed. However, it is well known in the art to make different sections of a product out of multiple parts, as making the parts



separable would allow the conducting element to be changed if damaged. In re Dulberg, 129 USPQ 348. Furthermore, it is well known in the art that separable sections can be attached by bores with attachment screws disposed in said bores at a distance from the inner layer for fixing the element to the outer plate. For example, Ladika et al. teaches an outer plate (46) and inner layer (144) wherein a separate element (246,264) is attached via a bore with attachment screws disposed in said bores at a distance from the inner layer for fixing the element to the outer plate (Fig. 3,8). It would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the elements using a bore with attachment screws disposed in said bores at a distance from the inner layer for fixing the element to the outer plate, such as taught by Ladika et al., in order to make the element separable and removable.

c. Regarding claim 6, Lanz discloses each spacer (9,16) is provided with a threaded bore designed to hold an attachment screw (12) fixing the outer plate onto the spacer. Lanz does not disclose the spacers being a hollow tubular shape. It would have been a matter of obvious design choice to form the spacers as a hollow tubular shape, as such a modification would have involved a mere change in shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. In re Dailey, 149 USPQ 47 (CCPA 1966).

d. Regarding claim 7, each spacer is provided with a threaded bore (Fig. 3a) having a first end a second end, said threaded bore being designed to hold, at

said first end, an attachment screw (10) fixing the spaced onto the inner layer, and, at said second end, an attachment screw (12) fixing the outer plate onto the spacer.

e. Regarding claim 14, the elements are flexible enough to enable differential dilatations between the outer plate and inner layer (paragraph 14).

### ***Response to Arguments***

7. Applicant's arguments filed 09/22/2009 have been fully considered but they are not persuasive. While applicant's have amended claims 1 and 15 to specify that the second material is a different material than the first material, the claims are still not found to allowable. First, the claims as written appear to be more broad than applicant is arguing. For example, applicant argues that ductile means "can be deformed plastically without fracture". However, there are degrees of ductility, and almost all metals are at least ductile to a certain extent. The degree of ductility in the claim is only limited or defined by its relative nature to the second material; there is actual limitation in the claim itself that imparts the limitation that any deformation caused by an impacting bullet must only create plastic deformation. In addition, many of the limitations concern functional language, such as "designed to resist first impacts of projectiles" and "for enabling differential expansion of the outer plate...". Functional phrases only require that the structure be capable of meeting the limitation.

***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Brown et al. (US Patent 4,529,640) teaches a sandwich structure with two different materials and spacers.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH A. PLUMMER whose telephone number is (571)272-2246. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Chilcot can be reached on (571) 272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeanette E Chapman/

Primary Examiner, Art Unit 3633

/E. A. P./

Examiner, Art Unit 3635